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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,637	06/25/2003	Balaji Venkateshwaran	42.P16442	5015

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EXAMINER

HUGHES, DEANDRA M

ART UNIT	PAPER NUMBER
3663	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/606,637		VENKATESHWARAN ET AL.	
	Examiner		Art Unit	
	Deandra M Hughes		3663	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

HL

5-01-0

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: 'conductivein' should be 'conductive in'. Appropriate correction is required.
2. Claim 10 is objected to because it is dependent upon itself. In the interest of compact prosecution, the Examiner examined claim 10 as if it depended upon claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7-8, 12-13, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Greywall (US 6,356,689 published Mar. 12, 2002).

**The references to the prior art made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

With regard to claims 1 and 8, Greywall discloses an apparatus (figs. 4A-4C) comprising:

- a single-crystal silicon active region (fig. 4B, #206A; col. 4, lines 50-55: 'single crystal SOI wafers') fully or partially transparent to an optical signal;
- a bulk silicon inactive region (fig. 4B, #202A; col. 4, lines 55-60);

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- and a membrane (fig. 4B, #204A is a SiO₂ layer; col. 4, lines 60-65)
coupling the single-crystal silicon active region (col. 10, lines 60-68) to the
bulk silicon inactive region;
- the single-crystal silicon active region doped to make it electrically
conductive (col. 10, lines 60-68) in order to thermally tune the single-
crystal silicon active region to pass a specific wavelength in response to
the received optical signal.

With regard to claims 12-13, fig. 4A, #408 discloses the bond pad.

With regard to claim 7, silicon nitride as a membrane layer is disclosed (col. 2, line 38).

With regard to claim 17, Greywall discloses an apparatus that operates according to the following method:

- adjusting resistivity of a doped silicon etalon (figs. 4A-4C; the growth methods disclosed in fig. 3 varies the resistivity);
- applying a current (via fig. 4A, #408) to thermally tune the doped silicon etalon to select a wavelength in response to a signal.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greywall (US 6,356,689 published Mar. 12, 2002) in view of Neustroev et al. (Hundred MEV Ion Irradiation Effect on Dopant Depth Profiles in Silicon, 1998).

Greywall does not specifically disclose the type of dopant used in the single-crystal active region. However, Neustroev teaches the claimed silicon crystal dopants (entire article). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to dope the silicon with the claimed dopants for the advantage of optimizing the apparatus for various electronic device applications, as is taught by Neustroev (pg. 641, col. 1, lines 4-5).

7. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Greywall (US 6,356,689 published Mar. 12, 2002) in view of Jeung (US 6,787,894 published Oct. 30, 2002).

Greywall does not specifically disclose the use of gold bond pads. However, Jeung teaches the use of gold bond pads (col. 1, line 59). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use gold bond pads for the advantage of increased conductivity.

8. Claims 9-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greywall (US 6,356,689 published Mar. 12, 2002) in view of Kurihara (US 2002/0155619 filed Apr. 22, 2002).

Greywall does not specifically disclose a platinum temperature sensor in his apparatus. However, Kurihara teaches the use of a platinum temperature sensor (paragraph [0071]). It would have been obvious to one of ordinary skill in the art (e.g.,

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an optical engineer) to use a platinum temperature sensor for the advantage of temperature control.

9. Claims 14-16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greywall (US 6,356,689 published Mar. 12, 2002) in view of Chraplyvy (US 5,907,420 published May 25, 1999).

With regard to claims 14 and 20-23, Greywall does not specifically disclose a transponder and an EDFA coupled to the his wavelength selective apparatus. However, Chraplyvy teaches tunable lasers (i.e., transponders) coupled to Booster EDFAs (fig. 2). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to coupled wavelength tunable transponders to an EDFA for the advantage of controlling the channels in an optical transmission system.

With regard to claims 15-16, Greywall does not specifically disclose an add/drop multiplexer. However, Chraplyvy teaches add/drop multiplexers coupled to the EDFA (fig. 2; circulator). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to couple an add/drop multiplexer for the advantage of changing the number of channels in an optical transmission system.

Conclusion


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Niemi and Bosco disclose optical etalons.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M Hughes whose telephone number is 571-272-6982. The examiner can normally be reached on M-F, 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deandra M Hughes
Examiner
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